

PROJECT TITLE : ANALYTICAL INVESTIGATIONS
PERIOD COVERED : JANUARY 28th - FEBRUARY 22nd
WRITTEN BY : F. MOSER

VOLATILE NITROSAMINES

DMN in ambient smoke

The concentration of DMN and of CO (1) in ambient smoke was determined.

Samples were taken in offices, conference rooms and in a discotheque. Results are summarized in Table 1.

DMN concentrations in offices 1 to 3 are not realistic in terms of human exposure to tobacco smoke. Window and door were kept closed during the sampling period (two hours) and people were forced to smoke the maximum amounts of cigarettes.

- DMN concentrations found are between 0.02 and 0.08 ng/l. Values as high as 0.24 ng DMN/l as reported elsewhere (2) could not be confirmed.
- CO values monitored correspond to values measured by Grandjean et al. (3) in enclosed environments.
- The factor DMN/CO which was found constant at 0.3 under experimental conditions (1) varies between 0.58 and 0.93 when determined under realistic conditions and in non-ventilated rooms.
- Noteworthy is the high concentration of N-nitroso-diethylamine (DEN) detected in some experiments. In sidestream- and mainstream smoke of cigarettes DEN is found in minor concentrations.

./.

SERVICES FOR OTHER GROUPS

53 lots (TLA) were analyzed for ISH.

REFERENCES

- (1) F. Moser, PME Research Laboratory, Monthly Progress Report, November 1979
- (2) K. Brunnemann et al., Amer. Chem. Soc. 1978, 876
- (3) E. Grandjean et al., Int. Arch. Occ. Environ. Hlth. 41, 267 (1978).

F. Moser

0000143665

Table 1. CONCENTRATION (NG/L) OF DIMETHYLNITROSAMINE (DMN) IN AMBIENT SMOKE

	Pers. present	Cig. smoked	DMN	DEN ^{a)}	$\frac{\text{DMN}}{\text{CO PPM}} \times 100$
Office (1)	3	28	0.08	n.d. ^{b)}	0.88
Office (2)	3	25	0.13	n.d.	0.86
Office (3)	3	35	0.15	n.d.	0.93
Office	2	12	0.02	0.01	0.90
Conference room ^{c)}	12	37	0.02	0.002	---
Conference room	36	--	0.04	---	1.33
Discotheque	30-75	--	0.07	0.2	---
Office	6	27	0.03	0.03	0.58
Office	4	26	0.04	n.d.	0.58
Office	7	18	0.08	n.d.	2.20 (!)

a) N-nitroso diethylamine (ng/l)

b) not detected

c) ventilated room

0000143666